IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Gladyshev et al.

Art Unit: 1642

Application No. 09/676,718

Filed: September 28, 2000

For: MAMMALIAN SELENOPROTEIN DIFFERENTIALLY EXPRESSED IN TUMOR CELLS

Examiner: Stephen L. Rawlings, Ph.D.

Date: July 18, 2002

CERTIFICATE OF MAILING

I hereby certify that this paper and the documents referred to as being attached or enclosed herewith are being deposited with the United States Postal Service on July 18, 2002 as First Class Mail in an envelope addressed to: U.S. Patent and Trademark Office, Box Sequence, P.O. Box 2327, Arlington, VA 22202.

Agent for Applicant

8-2-02

U.S. Patent and Trademark Office
Box Sequence, P.O. Box 2327
Arlington, VA 22202

SECOND PRELMINARY AMENDMENT

In the specification:

Replace the paragraphs on page 3, lines 21-37 with the following:

FIG. 1 shows the human cDNA sequence (SEQ ID NO: 2) encoding the 15 kDa selenoprotein and the amino acid sequence (SEQ ID NO: 1) of the selenoprotein itself. In the deduced amino acid sequence, the putative signal peptide is shown in lower case and the most probable site of post-translational cleavage is indicated by an upward arrow. The amino acid U represents selenocysteine 93 encoded by an in-frame TGA codon (overlined). The sequences of four tryptic peptides, for which amino acid sequences were experimentally determined, are underlined. In the 3'-UTR, the positions of the selenocysteine insertion sequence (SECIS element) and the poly-A addition signal (dotted underline) are shown.

FIG. 2 shows alignment of the human 15 kDa selenoprotein sequence (SEQ ID NO: 1) with homologs from mouse (SEQ ID NO: 9), nematodes (*C. elegans* SEQ ID NO: 16, *B. malayi* SEQ ID NO: 17) and rice (SEQ ID NO: 18).

FIGS. 3A and 3B relate to the SECIS element. FIG. 3A shows the general features of eukaryotic SECIS elements used to identify a matching element in the 3'-UTRs of the mRNAs encoding human and mouse 15 kDa selenoproteins. FIG. 3B shows an alignment of the predicted SECIS elements of the human (nucleotides 1083-1164 of SEQ ID NO: 2) and mouse mRNAs (nucleotides 1049-1127 of SEQ ID NO: 8) encoding the 15 kDa selenoprotein with a typical experimentally verified example (human GPX-